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Space power enables the modern American way of war. Counterspace operations allow the joint force to "exploit space capabilities while negating an adversary's ability to do the same." Combatant Commanders are not yet effectively integrating counterspace operations into operational planning and execution. This failure is primarily due to classification and command and control issues and an inability of their staffs to maintain pace with recent advances in counterspace capabilities and doctrine. Ineffective integration of offensive and defensive counterspace operations in theater war plans and operations may create combat inefficiencies and vulnerabilities by failing to preserve space superiority as a U.S. asymmetric advantage. Combatant Commanders should 1) advocate the development and implementation of both service and joint counterspace and space control doctrine 2) support and enhance joint space education and training efforts 3) create and formalize a *Joint* DIRSPACEFOR position 4) direct that counterspace operations integrate directly into their deliberate and crisis action planning processes and 5) direct that the designated space coordinating authority component provide space liaison officers to U. S. Strategic Command and Air Force Space Command, and request liaison officers in return.

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# EFFECTIVELY INTEGRATING COUNTERSPACE OPERATIONS – A CHALLENGE FOR THE COMBATANT COMMANDER

**By**

**Dewey Parker**
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**A paper submitted to the faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.**

**The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.**

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**17 May 2005**

## Abstract

Space power enables the modern American way of war. Counterspace operations allow the joint force to "exploit space capabilities while negating an adversary's ability to do the same." Combatant Commanders are not yet effectively integrating counterspace operations into operational planning and execution. This failure is primarily due to classification and command and control issues and an inability of their staffs to maintain pace with recent advances in counterspace capabilities and doctrine. Ineffective integration of offensive and defensive counterspace operations in theater war plans and operations may create combat inefficiencies and vulnerabilities by failing to preserve space superiority as a U.S. asymmetric advantage. Combatant Commanders should 1) advocate the development and implementation of both service and joint counterspace and space control doctrine 2) support and enhance joint space education and training efforts 3) create and formalize a *Joint* DIRSPACEFOR position 4) direct that counterspace operations integrate directly into their deliberate and crisis action planning processes and 5) direct that the designated space coordinating authority component provide space liaison officers to U. S. Strategic Command and Air Force Space Command, and request liaison officers in return.

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## Introduction

Space power enables the modern American way of war. U.S. forces are extremely reliant on space power capabilities and would be loath to lose the navigation, timing, weather, communications, warning and intelligence capabilities provided by space assets. Counterspace operations allow the joint force to "exploit space capabilities while negating an adversary's ability to do the same."[1] From many perspectives, counterspace operations and space warfare are in their infancy as mission areas. Space power supports air, sea and land warfare and provides an operational and tactical asymmetric advantage on the terrestrial battlefield. However, the requirement to *protect* U.S. space power while *denying* space capabilities to adversaries is a relatively new development. This requirement materialized in part due to the increased availability of advanced commercial space capabilities to adversaries, as well as the ability of non-space faring nations and non-state actors to threaten American space systems.

Combatant Commanders are not yet effectively integrating counterspace operations into operational planning and execution. This failure is primarily due to classification and command and control issues and an inability of their staffs to maintain pace with recent advances in counterspace capabilities and doctrine. Due to U.S. military reliance upon space power, ineffective integration of offensive and defensive counterspace operations in theater war plans and operations may create combat inefficiencies and vulnerabilities by failing to preserve space superiority as a U.S. asymmetric advantage.

This paper analyzes counterspace integration and execution issues at the theater level and develops recommendations to improve combat efficiency and mitigate risk by increasing the ability of joint forces to effectively conduct the space superiority mission.

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[1] U.S. Air Force, Space Operations, Air Force Doctrine Document 2-2, (November 27, 2001), 12. A copy of AFDD 2-2 can be found at <http://www.e-publishing.af.mil>

**Background and Definitions**

Part of the difficulty surrounding effective development of the counterspace mission area is the terminology used to describe it. *Space power* is defined as "the total strength of a nation's capabilities to conduct and influence activities to, in, through, and from space to achieve its objectives."[2] *Space control* is an approved joint term and is defined as:

> Combat, combat support, and combat service support operations to ensure freedom of action in space for the United States and its allies and, when directed, deny an adversary freedom of action in space. The space control mission area includes: *surveillance* of space; *protection* of US and friendly space systems; *prevention* of an adversary's ability to use space systems and services for purposes hostile to US national security interests; and *negation* of space systems and services used for purposes hostile to US national security interests."[3] [italics added]

The four pillars of *surveillance*, *protection*, *prevention* and *negation* are considered the essential elements of space control. *Space superiority* is defined as "the degree of dominance in space of one force over another that permits the conduct of operations by the former and its related land, sea, air, space, and special operations forces at a given time and place without prohibitive interference by the opposing force."[4] The U.S. Air Force defines several additional terms to describe these mission areas that align closely with its air power doctrinal language. In the Air Force lexicon, *counterspace operations* support the joint force space control requirement and are "those operations conducted to attain and maintain a desired degree of space superiority by allowing friendly forces to exploit space capabilities while negating an adversary's ability to do the same."[5] Three pillars compose counterspace operations. *Space situational awareness* (SSA)

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[2] Joint Chiefs of Staff, Joint Doctrine for Space Operations, Joint Pub 3-14, (9 August 2002), GL-6. A copy of JP 3-14 can be found at <http://www.dtic.mil/doctrine/jpoperationsseriespubs.htm>

[3] Joint Pub 3-14, GL-6.

[4] Joint Pub 3-14, GL-6.

[5] AFDD 2-2, 9.

includes traditional space surveillance, reconnaissance of space assets, space intelligence data and analysis of the space environment.[6] SSA effectively translates to the *surveillance* portion of space control. *Offensive counterspace* (OCS) is designed to "preclude an adversary from exploiting space to his advantage"[7] and loosely correlates to *prevention* and *negation*. *Defensive counterspace* (DCS) allows the U.S. military "to exploit space to its advantage via active and passive actions to protect friendly space-related capabilities from enemy attack or interference"[8] and is the equivalent of *protection*. The difference between joint and Air Force doctrinal terms adds a layer of complexity to discussion of the space control or counterspace mission. This paper uses both sets of terms throughout driven primarily by the context of the argument and sources used to form it.

**U.S. Military and Commercial Reliance on Space Power**

Few would argue the fact that both the American military and commercial enterprises have become increasingly dependent on space power. The July 2004 edition of *Air Force Magazine* stated "current military dependence on space is great and still growing."[9] The article describes the reliance of U.S. military forces on space power to enable the "speed and precision of the US operation" against Iraq and to "allow the toppling of the Iraqi regime by a force far smaller than many thought possible."[10] In a recent article for the *Army Space Journal*, Lieutenant General Larry J. Dodgen, the Commander of Army Space and Missile Defense

[6] AFDD 2-2, 10.

[7] AFDD 2-2, 9.

[8] AFDD 2-2, 10.

[9] John A. Tirpak, "Securing the Space Arena," Air Force Magazine (July 2004), available at <http://www.afa.org/magazine/July2004/0704space.asp>

[10] Tirpak.

Command (SMDC), describes the increasing importance of space power capabilities to national security and the health of the U.S. economy:

> Over the past four and a half decades, Space has become increasingly important to our national interests. Advanced systems critical to the Nation's security and economic well-being have been launched into orbit. Stock market transactions, credit card purchases and electronic banking are now completed quickly and precisely with the aid of networks and communications facilitated by satellites. Similarly, digital television, wideband Internet access and cellular telephone conversations are made possible through Space-based satellites.[11]

The increased reliance upon space power by both military and commercial entities mandates a requirement to ensure access to these U.S. space capabilities and builds a case justifying the development of the space control and counterspace mission areas. The particular assured access or *protection* activities described above would fall into the DCS category.

**Adversary Space Power Growth**

Additional justification for conducting space control or counterspace operations is found in the rapid growth of adversary space power capabilities (see Figure 1 for examples). Some of this growth is fueled by advances in *commercial* space activities and their availability to state as well as non-state actors. It is interesting to note that many commercial and some U.S. government space systems, such as the Global Positioning System (GPS), are *dual* use in that they are employed by both adversaries and friends alike. This can significantly complicate the targeting problem for counterspace operations.

[11] LTG Larry J. Dodgen, "Leveraging Space for Asymmetrical Advantage," The Army Space Journal (Fall 2004, Vol. 3, No. 2): 4.

| Capability | Example |
|---|---|
| Communications | Iridium |
| Positioning and Navigation | GPS |
| Weather | Various weather satellites such as METEOSAT-7 |
| Radar Imagery | RADARSAT-1 |
| Optical Imagery | Various commercial imagers such as EROS A1 |
| Directed Energy Weapons | Ground-Based Lasers |
| Kinetic Energy Weapons | Co-Orbital Anti-Satellites |
| Electronic Warfare | AviaConversia GPS Jammers |

**Figure 1. Example Adversary Space Power Capabilities**

The Commission to Assess United States National Security Space Management and Organization (the Space Commission) assessed the situation in January 2001:

> The relative dependence of the U.S. on space makes its space systems potentially attractive targets. Many foreign nations and non-state entities are pursuing space-related activities. Those hostile to the U.S. possess, or can acquire on the global market, the means to deny, disrupt, or destroy U.S. space systems by attacking satellites in space, communications links to and from the ground, or ground stations that command the satellites and process their data...An attack on elements of U.S. space systems during a crisis or conflict should not be considered an improbable act. If the U.S. is to avoid a "Space Pearl Harbor" it needs to take seriously the possibility of an attack on U.S. space systems.[12]

In point of fact, the first salvos have already been fired at U.S. space power systems. The Voice of America satellite broadcasts into Iran were jammed from Cuba in the summer of 2003, and Iraqi forces attempted to jam GPS-aided munitions during Operation Iraqi Freedom in the spring

[12] Report of the Commission to Assess United States National Security Space Management and Organization. Pursuant to Public Law 106-65 (Washington, DC: January 11, 2001): viii-ix. Available at <http://www.defenselink.mil/pubs/spaceintro.pdf>

of the same year.[13] Activities to destroy GPS jammers (protecting those GPS-aided munitions) or a Department of State *demarche* resulting in the cessation of jamming activities are examples of DCS operations. Conversely, a strike to destroy an enemy ground station used to control an imagery satellite is an example of an OCS mission intended to deny an adversary the use of that capability.

**Policy and Doctrinal Issues**

Although there are strong arguments for the United States military to conduct counterspace operations to preserve space superiority, a desired American asymmetric advantage, there are also counterarguments resulting in alternative conclusions. Theresa Hitchens of the Center for Defense Information contends that "there are real dangers to an aggressively offensive military strategy in space – primarily the potential for stimulating a space arms race that will make all space assets worldwide less secure."[14] She further claims that "what is lacking is any coherent 'concept of operations' for space warfare" which could lead to unintended consequences due to the globalized and civilian nature of many space assets.[15] For the purpose of this study, the conduct of counterspace operations is considered a military necessity directed by policy such as Department of Defense Directive (DODD) 3100.10. This directive states "ensuring the freedom of space and protecting U.S. national security interests in

[13] Congressional Research Service, Military Role in Space Control: A Primer (Washington DC: 23 September 2004): CRS-5.

[14] Theresa Hitchens, "Space Control: Who Ya Gonna Shoot?" Space News (January 24 2005), available at <http://www.cndyorks.gn.apc.org/yspace/articles/who_ya_gonna_shoot.htm>

[15] Hitchens.

the medium are priorities for space and space-related activities" and "purposeful interference with U.S. space systems will be viewed as an infringement on U.S. sovereign rights."[16]

The critique that incomplete thought and a paucity of guidance characterize the counterspace mission may be valid. A new mission area requires the proper doctrinal guidance for the activities supporting that mission. Unfortunately, there are several doctrinal issues hampering the efficient and effective conduct of counterspace operations.

The U.S. Air Force first released Air Force Doctrine Document (AFDD) 2-2, *Space Operations* in 1998 and updated the document in November 2001. Joint Publication 3-14, *Joint Doctrine for Space Operations* was not released until August 2002 after more than a decade of development and angst among the services. This reverse lead and lag between a service, in this case the Air Force, and the joint community resulted in several disconnects between the joint publication and service doctrine. Doctrine for joint space control and Air Force counterspace operations seems destined to follow the same path. The Air Force published AFDD 2-2.1, *Counterspace Operations* in August 2004. According to the Joint Doctrine website, there are currently 96 approved joint publications with 33 of those 96 under revision. There are 13 joint publications under development. Of those 13, only 2 are "to be developed," titled: *Space Control* and *Homeland Defense*.[17] It appears Air Force doctrine in this mission area will significantly lead joint doctrine development, once again risking a lack of congruence between the two.

Even within the Air Force there are dissenting opinions regarding the proper structure for counterspace doctrine. Major John Grenier points out weaknesses in the current counterspace

[16] U.S. Department of Defense, Department of Defense Directive 3100.10, Space Policy (July 9, 1999): 2. DODD 3100.10 is available at the Washington Headquarters Services website at <http://www.dtic.mil/whs/directives>

[17] See <http://www.dtic.mil/doctrine/docinfo/pstatus/newhier.ppt#1> for a visual depiction of the joint doctrine hierarchy and status.

construct and argues that counterspace and information operations (IO) doctrine "are not and should not be separated from one another."[18] He builds a case that counterspace operations in many instances are actually conducted in support of IO and should be developed and fully integrated at the theater warfighting level as opposed to the service major command or functional unified command level.[19]

Another set of doctrinal issues are illuminated by Air Force Lieutenant Colonel Thomas Doyne:

> The global nature of space presents a doctrinal dilemma. On one hand, the Air Force holds that a single commander should control both air and space forces for the theater command; but on the other, it acknowledges that SPACECOM [Air Force Space Command], and not an air commander in theater, has operational control of space forces. This dilemma exists on all levels of Air Force doctrine.[20]

One result of this doctrinal predicament is difficulty constructing effective command and control relationships to conduct counterspace operations. Both Major Grenier and Lieutenant Colonel Doyne acknowledge that these doctrinal command and control difficulties are exacerbated by current planning practices, which should be changed to ensure that "spacepower contributions to the overall campaign plan [are] stated in the basic plan section of the operation plan and not simply relegated to Annex N [Space Operations] and supporting plans."[21]

A final issue is the growing rift between Army and Air Force doctrinal thought on the subject of space control and counterspace operations. The Army has expressed concern

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[18] Major John Grenier, "A New Construct for Counterspace Doctrine," Air and Space Power Journal (Fall 2003), available at <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj02/fal02/grenier.html> Major Grenier's insightful article articulates an alternative construct which may inform joint doctrine, eventually leading to a disconnect between Air Force and joint authoritative doctrinal guidance in the space control/counterspace mission area.

[19] Grenier. In this case Air Force Space Command and U.S. Strategic Command.

[20] Thomas A. Doyne, "Space and the Theater Commander's War," Joint Force Quarterly (Winter 2000-2001): 78. Although somewhat dated in terminology, Lt Col Doyne's article is an excellent treatise of the issues surrounding the challenge of effective space power integration into theater warfare.

[21] Doyne, 80 and Grenier.

regarding the 2001 designation of the Air Force as the executive agent for space. Army Colonel Glen C. Collins Jr., director of the Force Development and Integration Center at Space and Missile Defense Command (SMDC) was quoted that year as saying:

> The increased responsibility and authority given to the Air Force ... must be balanced by increased oversight from the commander in chief of US Space Command [now US Strategic Command], the Joint Chiefs of Staff, and [the Office of the Secretary of Defense]. Without this oversight, there is potential that space could become focused on support to a single service, its style of warfighting, and to its priorities. This would be contrary to the best interests of the Army.[22]

In fact, the Army has lobbied to become the lead for the space control mission for years. In 2002, the Army Space Journal reported that:

> Terrestrial-based Space control is in the Army domain, it is an Army responsibility and, while it has not been codified as an Army mission, it clearly falls within the Army realm of operations — the Army has a specific interest in using it because it directly supports land operations. There are some who hope it will indeed be codified as an Army mission in the near future.[23]

Many of the Army and Navy arguments regarding command and control of space mission areas, such as space control, center on the perspective that space power decisions should be influenced greatly and perhaps even mandated by those services who are the greatest *users* of space power assets as opposed to the service responsible for acquiring and maintaining the *preponderance* of those assets. Army doctrinal thinking on this topic closely aligns with the construct promulgated by Major Grenier in which information operations (in this case primarily the discipline of electronic warfare) activities conducted *from the ground* comprise a large portion of the space control, or offensive counterspace mission area.

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[22] Ann Roosevelt, "Interservice Static in Space," Air Force Magazine (Sept 2001): 58.

[23] Ed Zehner, "Rational for Space Control as an Army Mission," The Army Space Journal (Summer 2002, Vol. 1, No. 3), available at <http://www.smdc-armyforces.army.mil/SpaceJournal/Article.asp?AID=22>

**Current Counterspace Integration Challenges**

In addition to the somewhat more esoteric doctrinal difficulties, the integration of counterspace operations into theater campaigns suffers from several problems. The first of these issues is the classification level of many counterspace capabilities, from technical specifics to the access theater planners are afforded to processes and information regarding the mission area. Since the Eisenhower administration and the political sensitivity to the language of "peaceful purposes" connected with the space domain, most activities in the space control regime have been cloaked in high levels of security and classification. As space power grows in value at the operational and tactical levels of war, planners at those levels must understand counterspace capabilities at a technical level in order to properly integrate those effects in theater war plans.

Air Force Colonel Michael Carey served as the Director of Space Forces (DIRSPACEFOR) for U. S. Central Command from three weeks prior to the Battle for Fallujah (OPERATION Al Fajr) through the inauguration of Afghan President Karzai and the Iraqi National Elections. He reports that new tools and processes, such as the Space Coordination Plan, are intended to "document a methodical approach to ensure space capabilities are included in planning efforts in the theater for operations."[24] His observations regarding integration of the space control mission include difficulties with "…a lack of space control expertise in the AOR." This lack of expertise is driven in part by personnel security clearance requirements as well as properly vetted and secure facilities for planning and coordination. A space staff officer's blunt assessment about hindrances to the Joint Force Commander's (JFC) effective integration of

[24] Colonel Michael J. Carey, "Integrating Space Capabilities in Support of the CENTCOM Theater of War: A Challenge for the DIRSPACEFOR," Unpublished draft paper (18 April 2005): 4.

counterspace operations included "classification issues (God level clearance needed, which really affects us in coalition operations.)"[25]

The rapid growth of counterspace capabilities also contributes to difficulties at the theater level. Although these very classification issues hinder the discussion of this topic here in any detail, there are a few unclassified data points useful to illuminating the issue. The Air Force recently released information regarding a Counter Communications System (CCS) used to disrupt enemy satellite communications. Undersecretary of the Air Force, Peter Teets, said that this capability was fielded in 2004 with the 76th Space Control Squadron. Mr. Teets informed Congress that the Air Force will deliver two more systems in Fiscal 2005 prior to starting development efforts for a next generation capability.[26] There are also new investments in software and hardware to detect attacks on satellites; capabilities to generate improved space situational awareness; kinetic attack satellites; and expansion of a space range designed to both develop new tactics and exercise new equipment. Additional details on these systems such as timelines for development, concepts of employment, specific capabilities and limitations remain classified at the highest levels. The Army, Navy and Air Force plan to spend approximately $300 million dollars on unclassified space control programs in FY2005. If fully funded, the requested budget through FY2009 approaches two billion dollars.[27] One can only imagine the total expenditure on counterspace systems if the classified programs were included in the total.

Perhaps the most vexing issue concerning the effective integration of counterspace at the theater level is that of command and control. Air Force Lieutenant Colonel Brian Fredricksson

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[25] Bart M. Hughes. <hughesb@socom.mil> "RE: Request for Interview." [E-mail to Dewey Parker <lamar.parker@nwc.navy.mil>] 21 March 2005.

[26] Tirpak.

[27] CRS Report, 18-19.

posits a command and control structure that recognizes the fact that "Space power, even more than airpower, is inherently global in nature, and its limited force structure is in high demand."[28] He advocates a command and control structure which relies on significant reach back to the Space Air and Space Operations Center (Space AOC) located at 14th Air Force, Vandenberg Air Force Base, California. He argues that:

> The Air Force should integrate joint space capabilities at the operational level of conflict. As the lead service for space and the one with the preponderance of its capabilities and the ability to command and control through the Space AOC, the Air Force is uniquely postured to assume this role. However, as long as the presentation of space effects remains fragmented across multiple agencies and services, the United States will fail to realize space power's full effectiveness or achieve its full potential.[29]

A counterargument to Lieutenant Colonel Fredricksson's construct, especially with regard to counterspace command and control, is presented by a theater space staff officer who suggests that command and control and planning activities should occur at the theater level:

> The biggest issue I see is AF Space Command (AFSPC), and their subordinate C2 agency, 14th AF, potentially wanting to maintain control for planning and execution within their influence at their locations in CONUS. I've seen that happen for other space capabilities and would see them doing the same thing for this [counterspace capabilities]. That is not the way to fight a war![30]

Perhaps the last words on the topic of command and control should be given to Colonel Carey who was eventually designated the *Joint* DIRSPACEFOR by the CENTCOM Combined Forces Air and Space Component Commander (CFACC), Lieutenant General Buchanan. He states this action was taken in part because of "the fact I was seen as an Air Force advisor, only, to some

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[28] Lieutenant Colonel Brian E. Fredricksson, "Space Power in Joint Operations: Evolving Concepts," Air and Space Power Journal (Summer 2004), available at <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj04/sum04/fredriksson.html> This article is an excellent and current review of space power characteristics and how space power might be better integrated into the joint fight using emerging military concepts.

[29] Fredricksson.

[30] Wes Whitaker. <whitakw@socom.mil> "RE: Request for Interview." [E-mail to Dewey Parker <lamar.parker@nwc.navy.mil>] 31 March 2005.

created friction and detracted from timely coordination on some space issues which were relevant to accomplishing objectives set forth by the supported commander, GEN Casey, Commander, Multi-National Forces – Iraq (MNF-I)."[31] His experiences led him to believe that many traditional space capabilities were effectively integrated into theater operations through reach back similar to Lieutenant Colonel Fredricksson's concept. The exception to this observation is the fact that "opportunities were being missed and risk is being incurred due to a lack of space control expertise in the AOR."[32] The CENTCOM structural solution to mitigate this problem was the development of a Joint Space Integration Cell:

> A small pool of space experts tasked to perform mission area analysis and draft COAs to develop relevant theater space-related situational awareness, protect his critical satellite communication links, and if appropriate and authorized deny the same to an adversary thus assuring space control. They will be key to synchronizing the efforts of reach back capabilities and developing a potential theater source for a greater single integrated space picture.[33]

Although this cell may greatly aid integration at this level, the DIRSPACEFOR position itself is problematic from several other perspectives. The current construct is for the DIRSPACEFOR to reside on the CFACC's staff and not to function as a liaison officer. Colonel Carey reminds us that "There is no US Strategic Command or Air Force Space Command liaison officer in the CAOC, nor is there a CFACC liaison officer in either of those two commands. This is a potential issue when we are relying on significant reach back."[34]

Perhaps a robust exercise program will help inform the proper command and control scheme for counterspace operations wherein the appropriate mix of personnel and expertise both forward- and CONUS-based becomes apparent. As both Colonel Carey and Lt Col Fredricksson

[31] Carey, 5.

[32] Carey, 10.

[33] Carey, 11.

[34] Carey, 8.

discuss, the discrimination tool may well be an analysis of the *global* versus *local* effects produced by a particular counterspace operation. Language in AFDD 2-2.1 also details the need for command relationships to be flexible and uniquely dictated by each situation "whether supporting global or theater operations."[35] The real difficulty, of course, is providing effective command and control when counterspace operations simultaneously create effects requiring deconfliction at the strategic, operational and tactical levels of warfare.[36] The overarching goal must be to achieve unity of command and unity of effort to increase the efficiency and effectiveness of space power's contributions to military operations.

An area related to that of command and control is the specific integration of counterspace capabilities within the services. The Army is determined "to ensure Army Space operations are carefully doctrinally integrated into other Army operations, they never serve their own purpose (Space for the sake of Space) nor is it intended for Space to be a separate entity which is then stove piped into other operations."[37] As the Army restructures itself into modular Units of Employment and Units of Action (essentially Brigade Combat Teams), the intent is to integrate Space Support Elements (SSE) comprised of space operations officers (Functional Area 40, or FA40s) and space-savvy NCOs to "operationalize" space at the tactical level. These SSEs fulfill many tasks, including the responsibility to coordinate the "protection of friendly Space

[35] AFDD 2-2.1, 7. See Chapter Two, Command and Control of Counterspace Operations for a detailed discussion of the Air Force perspective regarding the proper structure to effectively execute Space Coordinating Authority for the JFC. This chapter discusses the responsibilities of the key players, presents a logic tree to categorize space assets and is focused on achieving unity of command and unity of effort for counterspace operations.

[36] The classic example of this issue is an offensive counterspace mission involving jamming of a commercial satellite carrying an enemy communications signal. Strategically, legal and political ramifications regarding the "peaceful purposes" language in the UN Charter and the Outer Space Treaty may emerge. Operationally, that same satellite may be carrying friendly communications traffic requiring deconfliction and prior coordination with the commercial company. Tactically, the jamming signal may impact other friendly air- or ground-based transmissions.

[37] Ed Zehner, "Developing Space Doctrine," The Army Space Journal (Fall 2004, Vol. 3, No. 2): 20.

capabilities and the negation of enemy Space capabilities."[38] Skeptics may view this as a structure to ensure the subordination of space forever to a supporting role, but the Army views it as an efficient and effective way to integrate space power into their land warfighting core competencies. This integration model is different than that of the Air Force, which has not yet seen the need to routinely integrate space officers and NCOs below the operational level of warfare into combat and mobility forces at the wing or group level.

Since the services often fight in very different ways, the integration of counterspace capabilities certainly need not look the same from a structural perspective. It is clear, however, that combined education and training is a requirement in this realm just as it is in any other modern warfighting activity. The National Security Space Institute (NSSI) officially stood up in the summer of 2004.[39] Air Force, Army and Naval personnel are currently represented on the staff on a somewhat ad hoc basis. The new Deputy Commander for SMDC/Army Forces Strategic Command, Colonel Jeffrey Horne reports "we have to take the next step toward jointness and shared TTPs [Tactics, Techniques and Procedures] and doctrinal development with our sister services. We hope to assign five people to the National Space Security Institute (NSSI) this coming year to begin the process of institutionalizing our training programs jointly…"[40] The eventual NSSI goal is to build a center of education and training excellence

[38] LTC Rick Dow, "Space Support Elements," The Army Space Journal (Fall 2004, Vol. 3, No. 2): 26.

[39] The NSSI is an expansion of the USAF Space Operations School, which was activated 28 June 2001 as a subordinate unit of the Space Warfare Center, located at Schriever AFB, CO. The NSSI mission is: "Air Force lead in the instruction of space systems knowledge, operational concepts, and tactics required to prepare warfighters for military operations." The sister services and other space organizations, such as NASA and the NRO are now providing expertise and staff to present a broader national security space perspective to the curricula. The NSSI reports directly to Air Force Space Command and, by extension, to the USECAF as the Executive Agent for Space.

[40] COL Jeffrey C. Horne, "Space Proponency and Our Future," The Army Space Journal (Fall 2004, Vol. 3, No. 2.): 9.

responsible not only for developing and teaching space curricula, but also for providing intellectual capital to inform joint space doctrine and tactics development.

The requirement for increased training and education to support activities at the theater level is clear. Colonel Carey opines that:

> The difference between space systems and air systems is that air systems are more widely understood, in general, so planners and operators knew to ask for expert help. I found that there was still a general lack of knowledge regarding space systems and their capabilities amongst the personnel throughout the CENTCOM AOR; hence they often didn't even know to ask pertinent questions.[41]

Specifically regarding counterspace operations, his observation as the DIRSPACEFOR was that units were accepting unidentified risk due to their lack of expertise in the mission area. After identifying the lack of expertise, the challenge for him and the CFACC was to both secure the required expertise and system capabilities and then to integrate the personnel in the CAOC and the systems into the fight.[42]

**Recommendations**

There are several steps Combatant Commanders can take to ensure counterspace operations are more effectively integrated into their operational warfighting activities. The first of these is to advocate the development and implementation of both service and joint counterspace and space control doctrine. The priority of accelerating the development of space control doctrine in the joint community must be addressed by the Combatant Commanders. They should also bring pressure to bear to ensure service and joint doctrine do not diverge as happened to some degree between other Air Force and joint space power doctrine.

Second, recent joint space education and training efforts should be supported and enhanced. Combatant Commanders should levy requirements on their staffs to attend courses at

[41] Carey, 6.

[42] Carey, 7.

the National Security Space Institute. Much of the curriculum there is focused at the operational and tactical levels of war. Colonel Carey reported that:

> Since I haven't been involved in theater air, land, sea operations throughout my career it becomes clear I was on the working side of a steep learning curve, and must invest energy in learning the vernacular, operations, force structure, relevant terrain, etc. It is within this context that space operations must be applied to become tactically relevant.[43]

Conversely, those air, land and sea warriors on the theater staff must become more conversant in the language of space operations to address the same issues, especially with regard to counterspace operations.

Third, each Combatant Commander should create and formalize a *Joint* DIRSPACEFOR position complete with a staff to execute their Space Coordinating Authority responsibilities. Additionally, each Combatant Commander should create and experiment with a Joint Space Integration Cell following the CENTCOM model to determine if this construct increases the relevance and efficiency of counterspace operations in their theater. If staffed properly, this cell could mitigate some of the issues revolving around the highly classified nature of many counterspace capabilities.

Fourth, each Combatant Commander should direct that counterspace operations integrate directly into their deliberate and crisis action planning processes as opposed to relegating them to Annex N (or Annex S) of a plan or order. Space control or counterspace operations should be addressed in the situation, execution and command and control paragraphs of a plan or order.[44] At a minimum, they should be integrated in Annex C, Operations.

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[43] Carey, 5.

[44] There are many sources for this suggestion, but perhaps Lt Col Doyne articulates it most clearly in his excellent article, "Space and the Theater Commander's War."

Finally, Combatant Commanders should direct that the designated space coordinating authority (SCA) component (in many cases this will be the CFACC) provide space liaison officers to U. S. Strategic Command and Air Force Space Command and request liaison officers in return to staff the AOC, or whatever command and control function is responsible for performing the SCA duties.

**Conclusion**

Combatant Commanders are not yet effectively integrating counterspace operations into operational planning and execution. Effectively and efficiently integrated space control and counterspace operations have the potential to ensure the U. S. military maintains one of its asymmetric advantages on the modern battlefield – space superiority. Although many challenges exist in this relatively new mission area, there are concrete steps Combatant Commanders should take to mitigate the possibility of assuming unidentified risk. These steps primarily involve addressing classification and command and control issues and the inability of their staffs to maintain pace with recent advances in counterspace capabilities and doctrine. Due to U.S. military reliance upon space power, ineffective integration of offensive and defensive counterspace operations in theater war plans and operations may create combat inefficiencies and vulnerabilities, or in a worst case scenario, lead to the "Space Pearl Harbor" described by the Space Commission.

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